

Guided Multiple Launch Rocket Systems (GMLRS)

The Guided Multiple Launch Rocket System (GMLRS) consists of two variants of rockets fired from the M270A1 or High Mobility Artillery Rocket System (HIMARS) launchers. The GMLRS Dual-Purpose Improved Conventional Munition (DPICM) variant carries 404 bomblets, while the GMLRS Unitary rocket will have a single, 200-pound class, high-explosive, Unitary warhead. Both variants use an inertial measurement unit guidance system that is aided by the Global Positioning System.

With the planned capabilities of the new rockets, the Army intends that a unit equipped with GMLRS will shoot farther (over 60 km versus 30 km) and achieve desired effects with fewer rockets (due to improved accuracy) and fewer duds (for GMLRS DPICM) or reduced collateral damage (for GMLRS Unitary) than the currently fielded MLRS rocket. GMLRS is used primarily in general support of maneuver divisions and corps. GMLRS DPICM is employed against lightly armored, stationary targets such as towed artillery, air defense units, and communication sites. GMLRS unitary will have three fuze settings for use against personnel in the open (proximity fuze); lightly fortified bunkers (delayed fuze); or a single, lightly armored target (point detonating fuze).

GMLRS DPICM is multi-national, cooperative development and production program that had its Milestone C decision in March 2003. It is scheduled for a 2QFY05 full-rate production decision and 2QFY06 initial operational capability. GMLRS Unitary had its Milestone B decision in March 2003. It is scheduled for a 4QFY06 Milestone C, 2QFY08 initial operational capability, and a full-rate production decision in 3QFY08. Depending on the results of initial testing and a validated need, an early version of the rocket could be fielded sooner than 2008.

TEST & EVALUATION ACTIVITY

All six engineering design tests and eleven Production Qualification Tests have been completed for GMLRS DPICM. The program executed all tests in accordance with the DOT&E-approved test strategy.

LFT&E of the DPICM warhead will be integrated with the developmental and operational testing against surrogate targets. Individual target element damage will be assessed after each mission to determine the achieved fractional damage.

DOT&E is working with the Army to finalize the Test and Evaluation Master Plan for the GMLRS Unitary variant.

TEST & EVALUATION ASSESSMENT

To date, tests demonstrate that the GMLRS rocket has the accuracy and range needed to meet its requirements; however, the hazardous dud rate continues to be a problem.

The GMLRS engineering development tests fired nine rockets in six tests. All of the seven rockets that dispensed sub-munitions were well within the accuracy needed to meet effectiveness requirements. One rocket did not dispense its sub-munitions. The ninth rocket did not launch. The contractor identified fixes and included them in the production qualification flights. The problems have not recurred. The program successfully fired twenty-two of the scheduled 26 rockets during Production Qualification Tests. These rockets were within the accuracy needed to meet



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requirements. Four separate problems caused the four failures, in which three rockets failed to dispense their sub-munitions, and one rocket failed to launch. The contractor has identified the causes and will incorporate fixes into the production design. Rocket reliability is within the requirement for the program at this time; however, a higher reliability will be required for the production rockets.

The required dud rate (less than 1 percent) has not been achieved. The Army hoped to achieve this requirement by making adjustments to the fuze of the current DPICM bomblet. Even with these changes, the dud rate varies as a function of range between 1.2 and 7.6 percent. This is significantly better than the current MLRS M26 rocket, which has average dud rates of 10 percent at 17 km and 8 percent at 37 km. The Army continues to experiment with fuze adjustments, but it is unlikely the bomblet will meet the dud rate requirement for all ranges. Therefore, the Army requested changing the GMLRS sub-munition dud rate requirement to two percent averaged between ranges of 20 and 60 km and four percent averaged for ranges between 15 to 20 km and 60 to 70 km. The Joint Requirements Oversight Council approved this proposal in November 2003. The international partners are developing a self-destruct fuze, which might reduce the dud rate to less than one percent. Inclusion of this new fuze on the bomblet in production rockets depends on the results of upcoming tests and production costs.

Additional tests, including operational and live fire testing, are planned to demonstrate GMLRS DPICM effectiveness against countermeasured targets and to show its interoperability. All flight tests to date have been accomplished with a modified Improved Position Determining System launcher, as opposed to an operationally representative one. Planned interoperability testing, therefore, will demonstrate that GMLRS can be fired from the M270A1 and HIMARS launchers.

GMLRS Unitary will begin developmental testing in 2004.